

Fig. 1

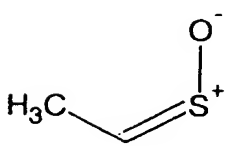
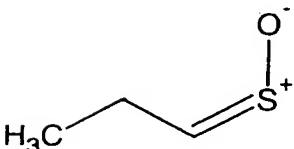
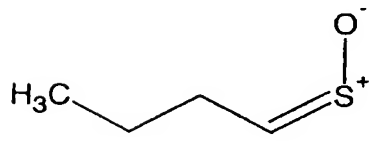
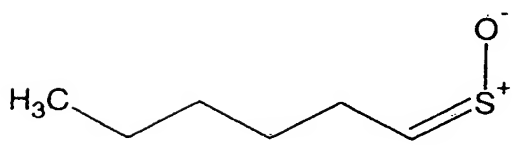
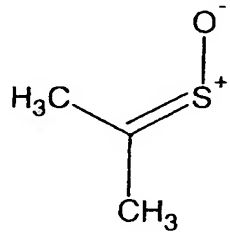
No.	structure	lachrymatory property
(1)		+ Thioethanal <i>S</i> -Oxide
(2)		+ Thiopropanal <i>S</i> -Oxide
(3)		+ Thiobutanal <i>S</i> -Oxide
(4)		+ Thiohexanal <i>S</i> -Oxide
(5)		- Thioacetone <i>S</i> -Oxide

Fig. 2

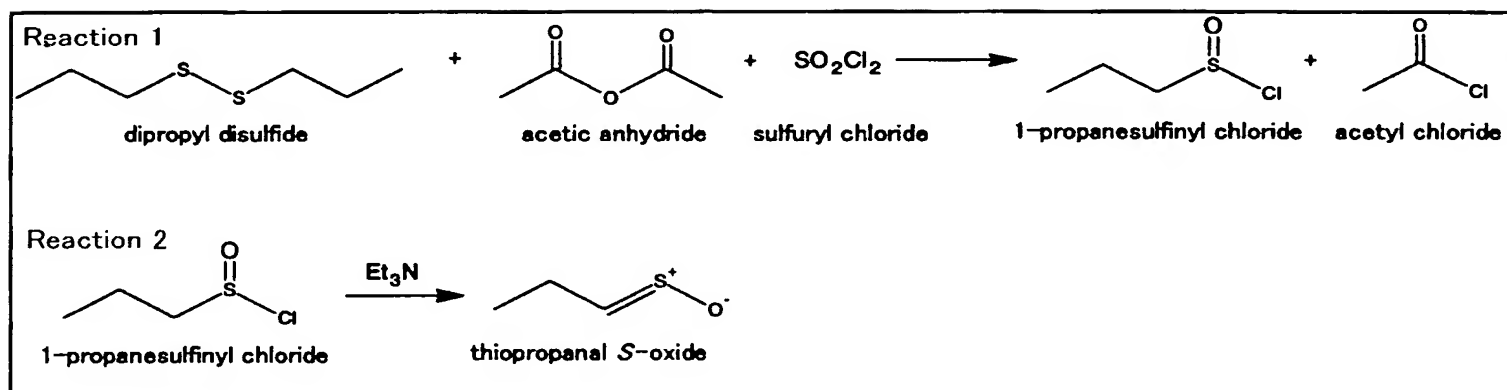


Fig. 3

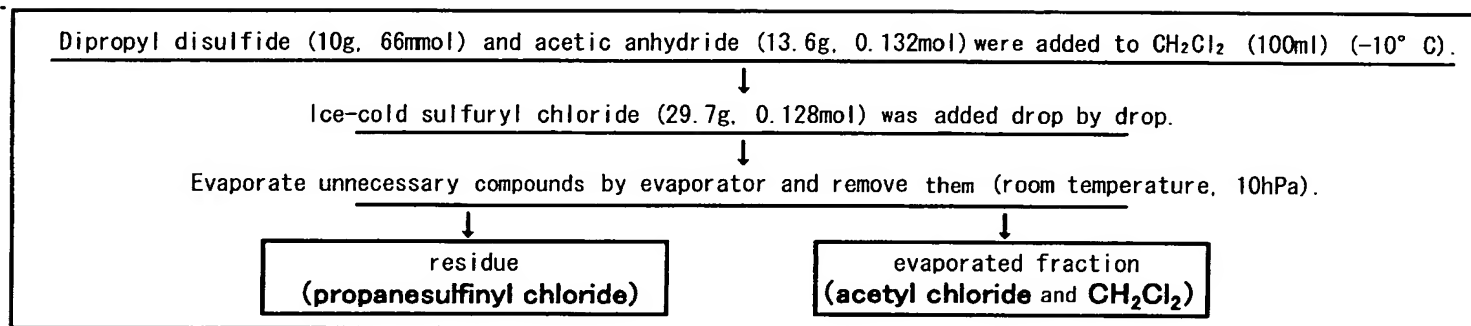


Fig. 4

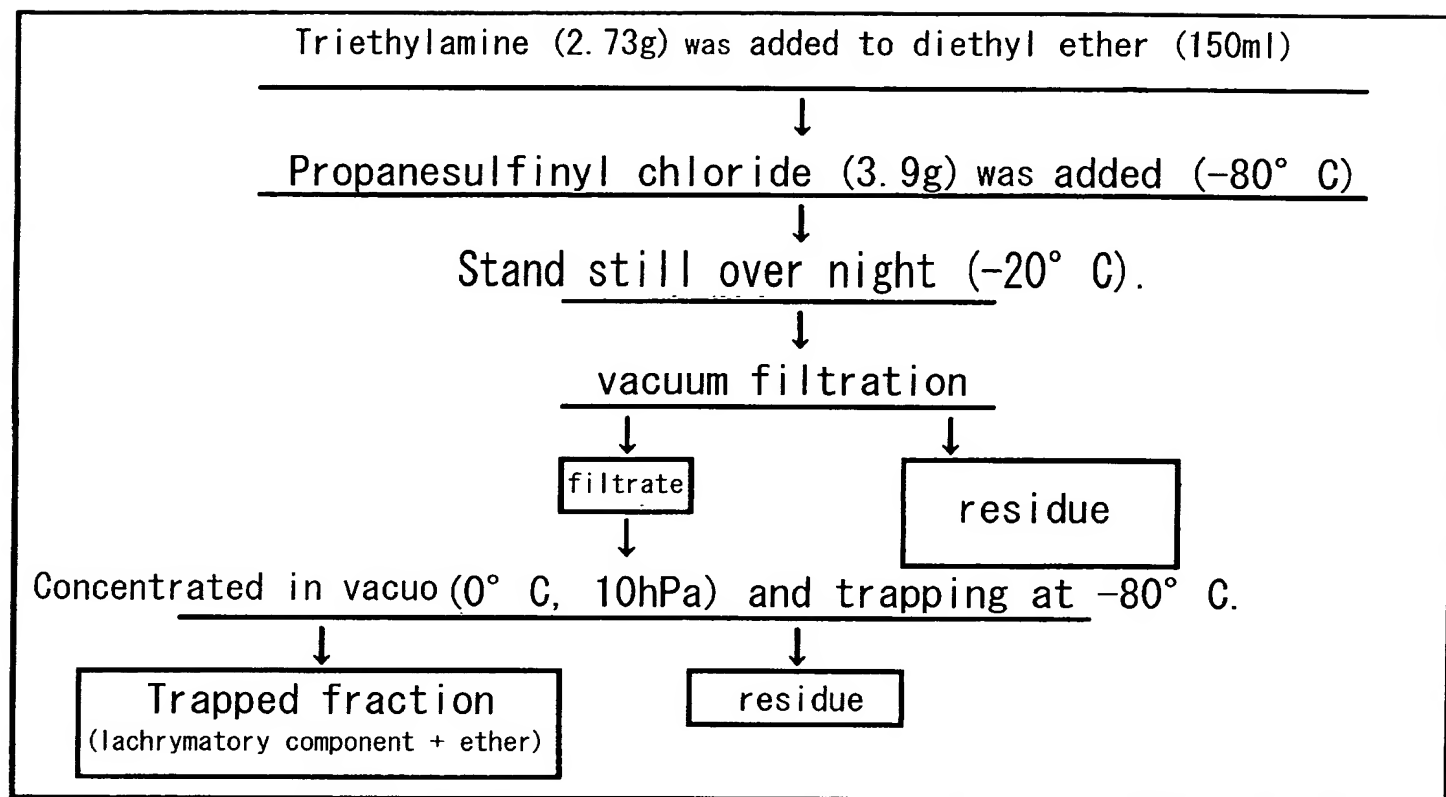
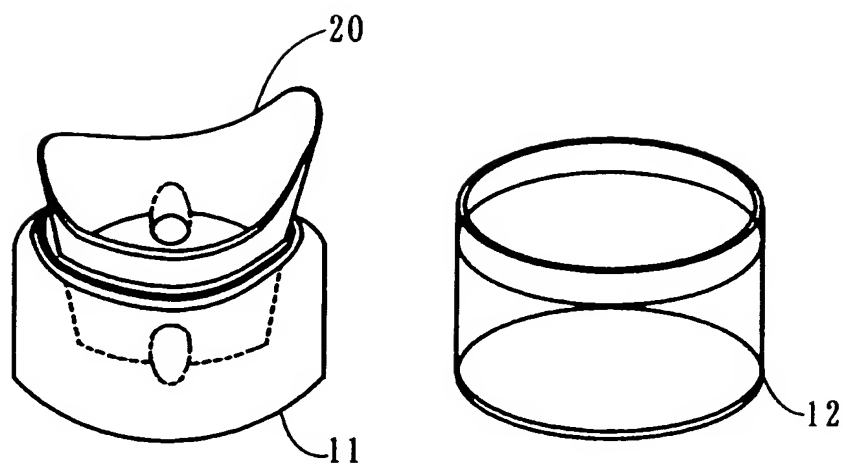


Fig. 5

a)



b)

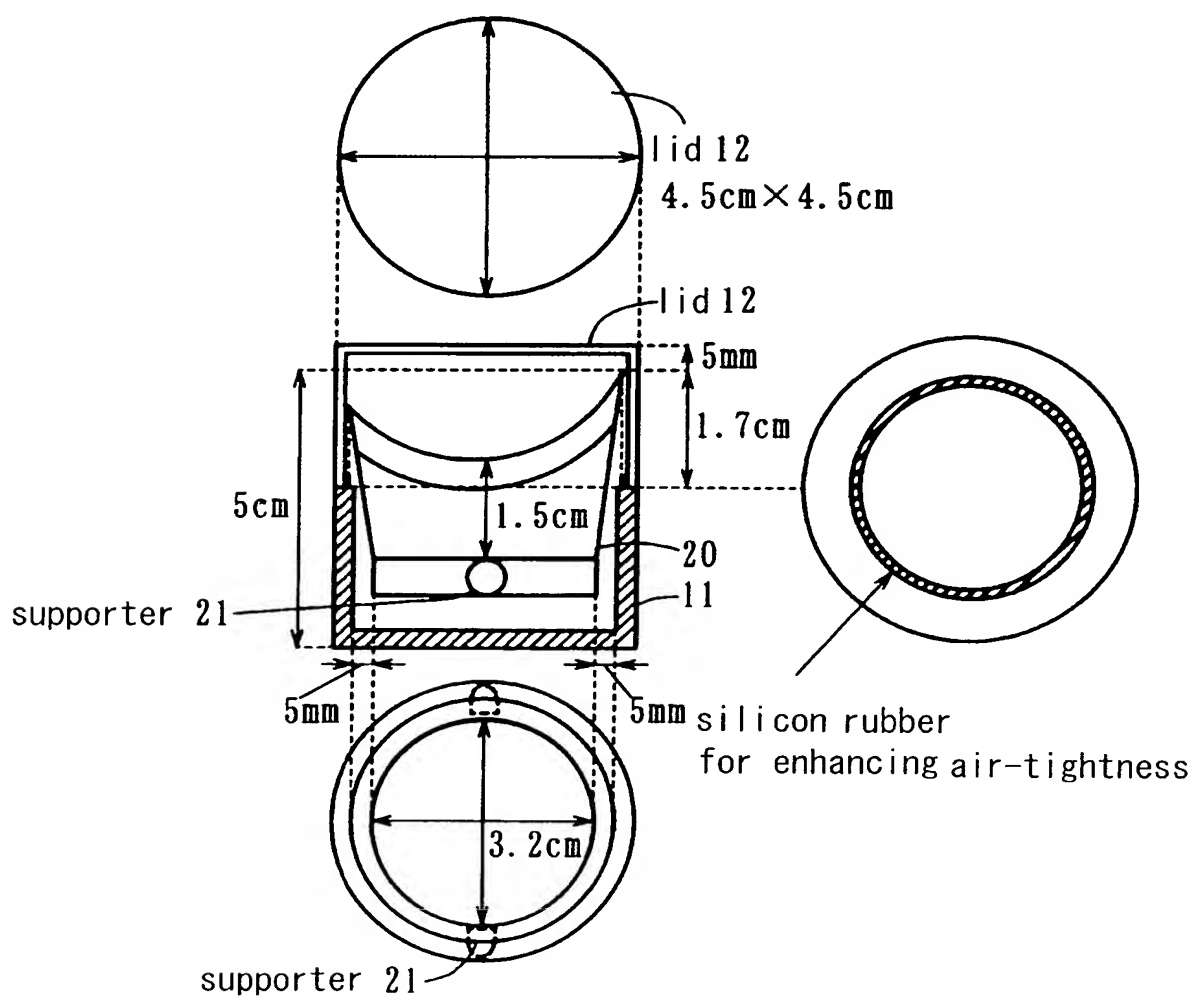


Fig6

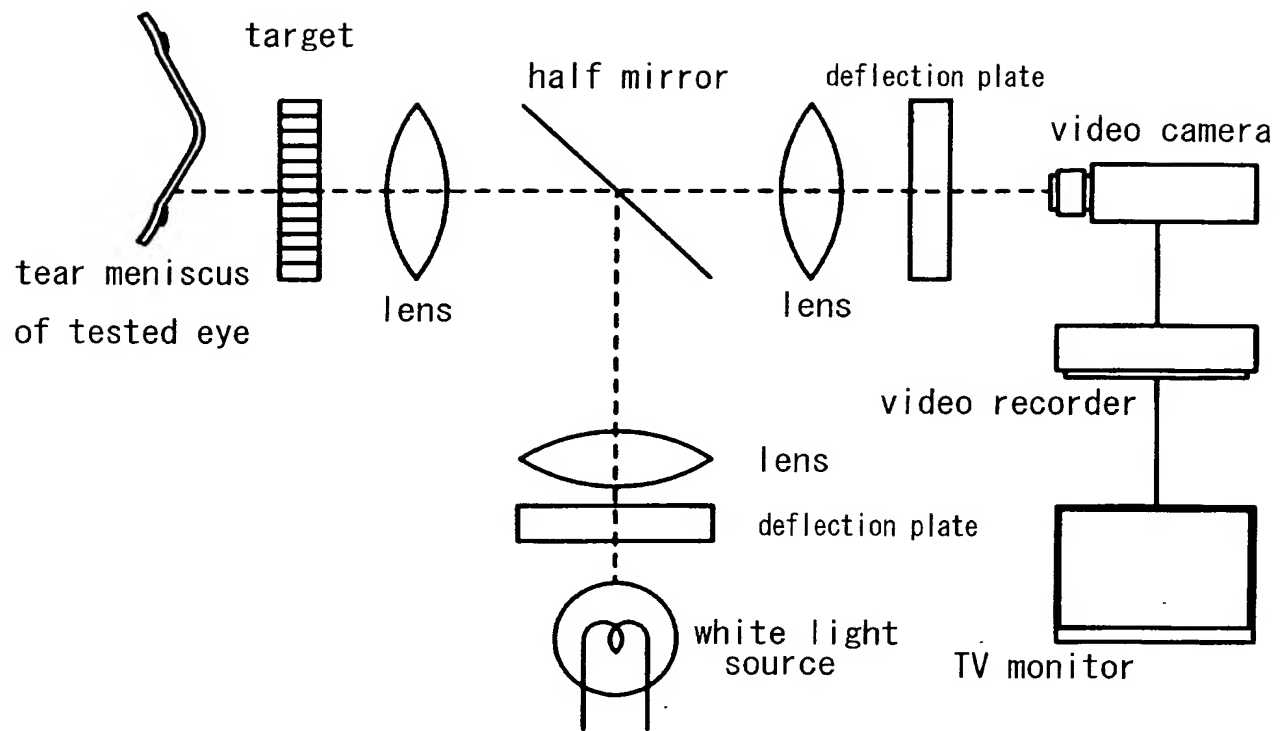


Fig. 7

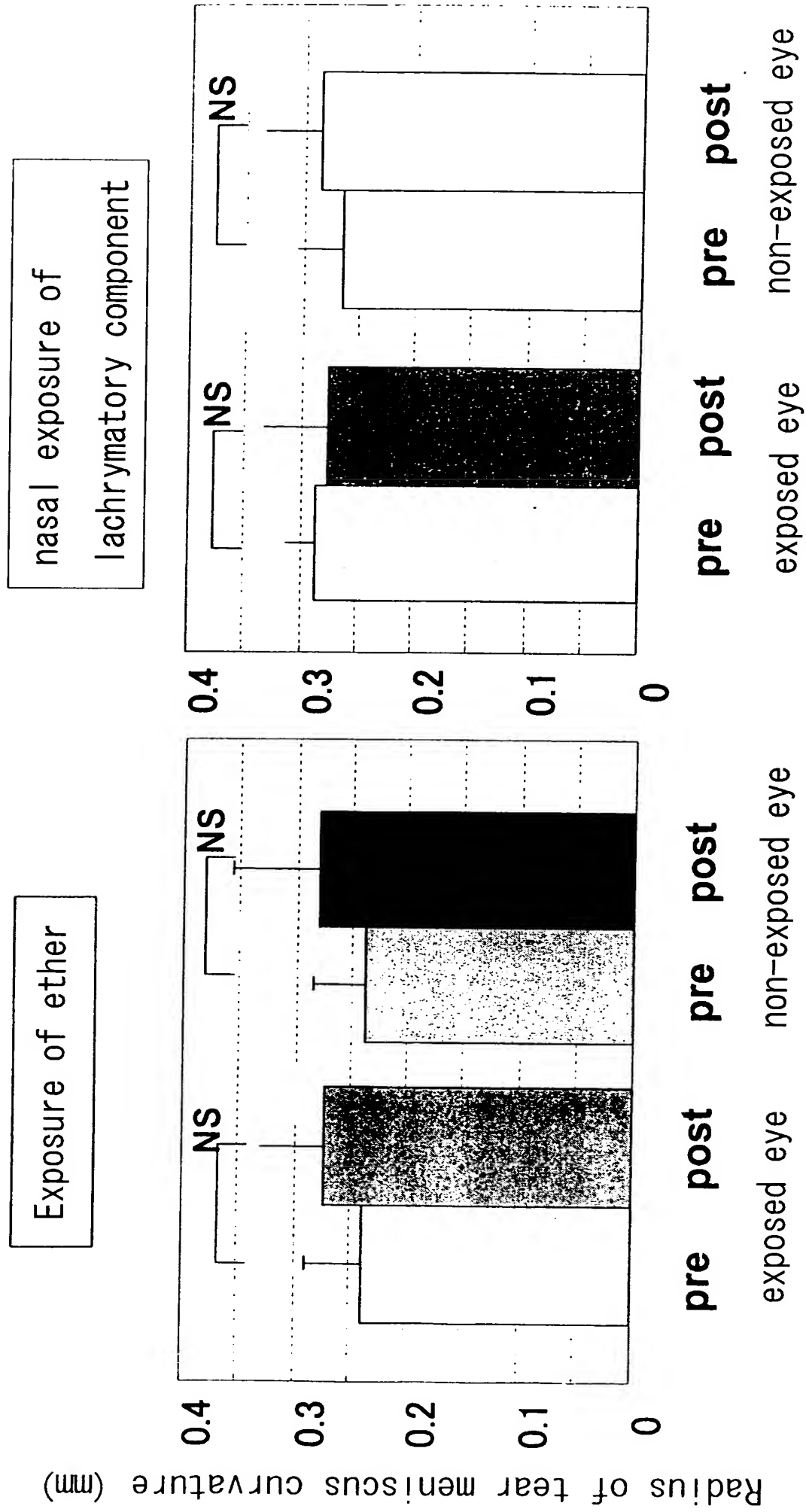
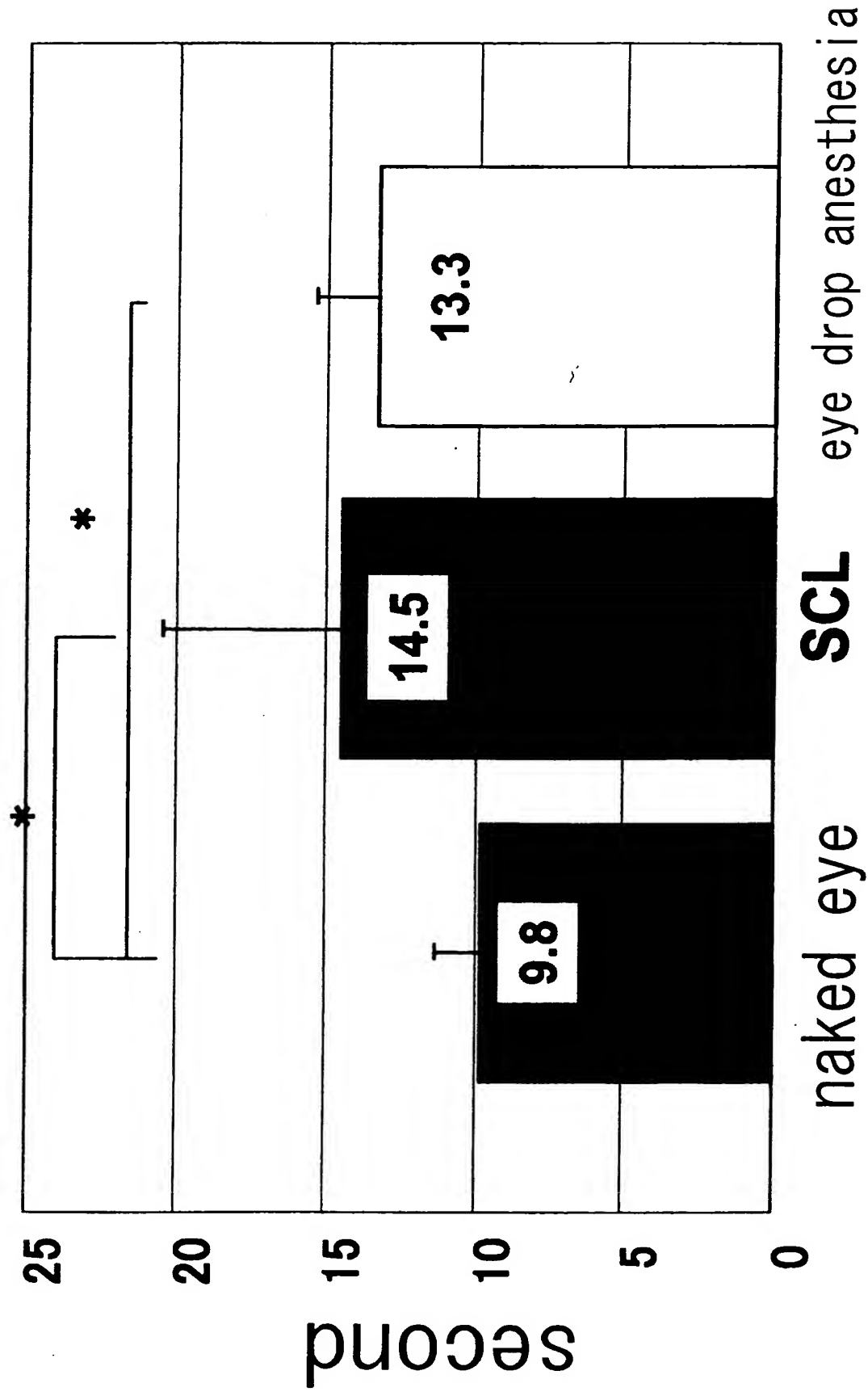


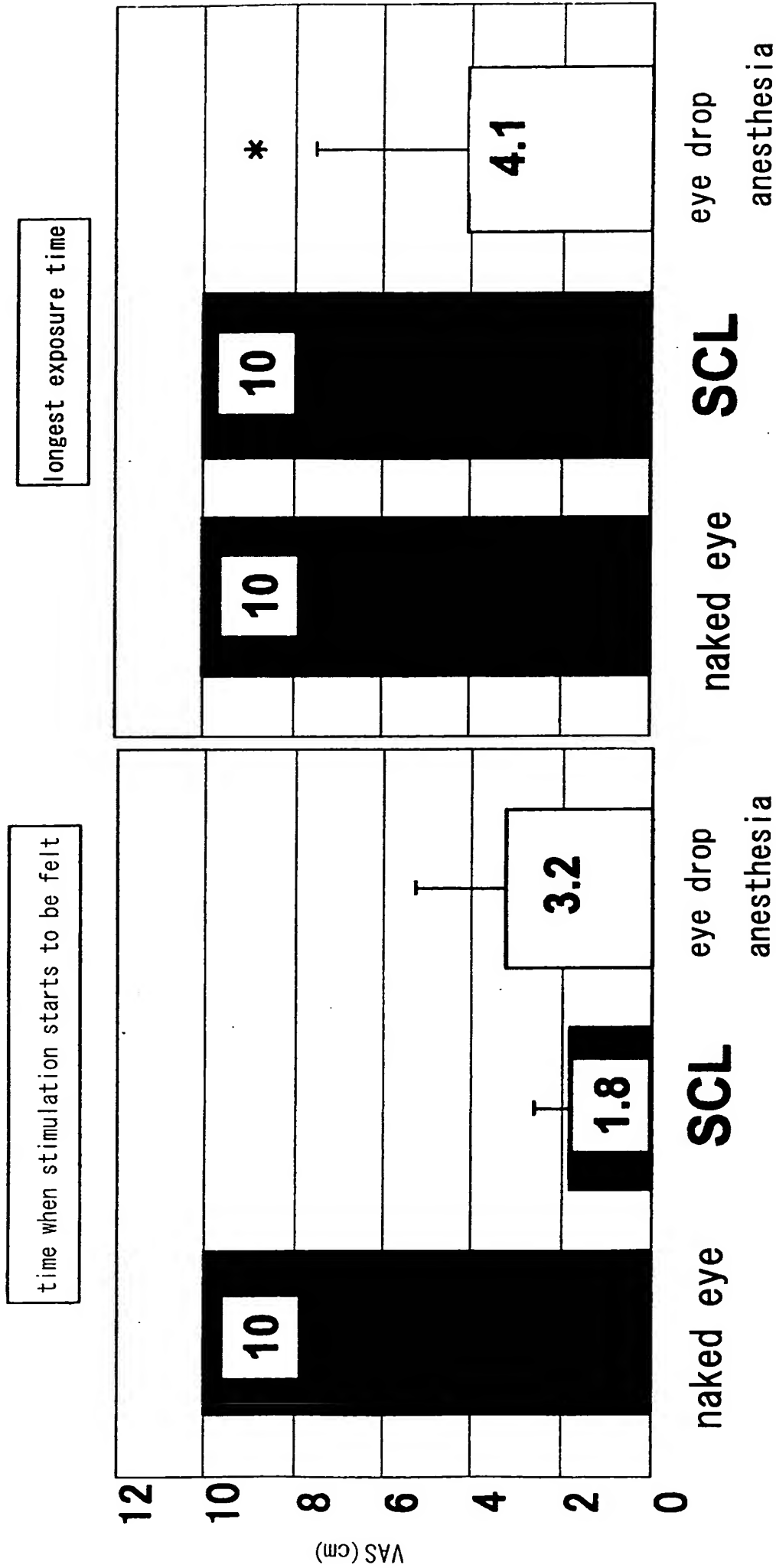
Fig. 8



**\* :  $P < 0.05$  (Kruskal Wallis)**



Fig. 9



\* :  $P < 0.05$

Fig. 10

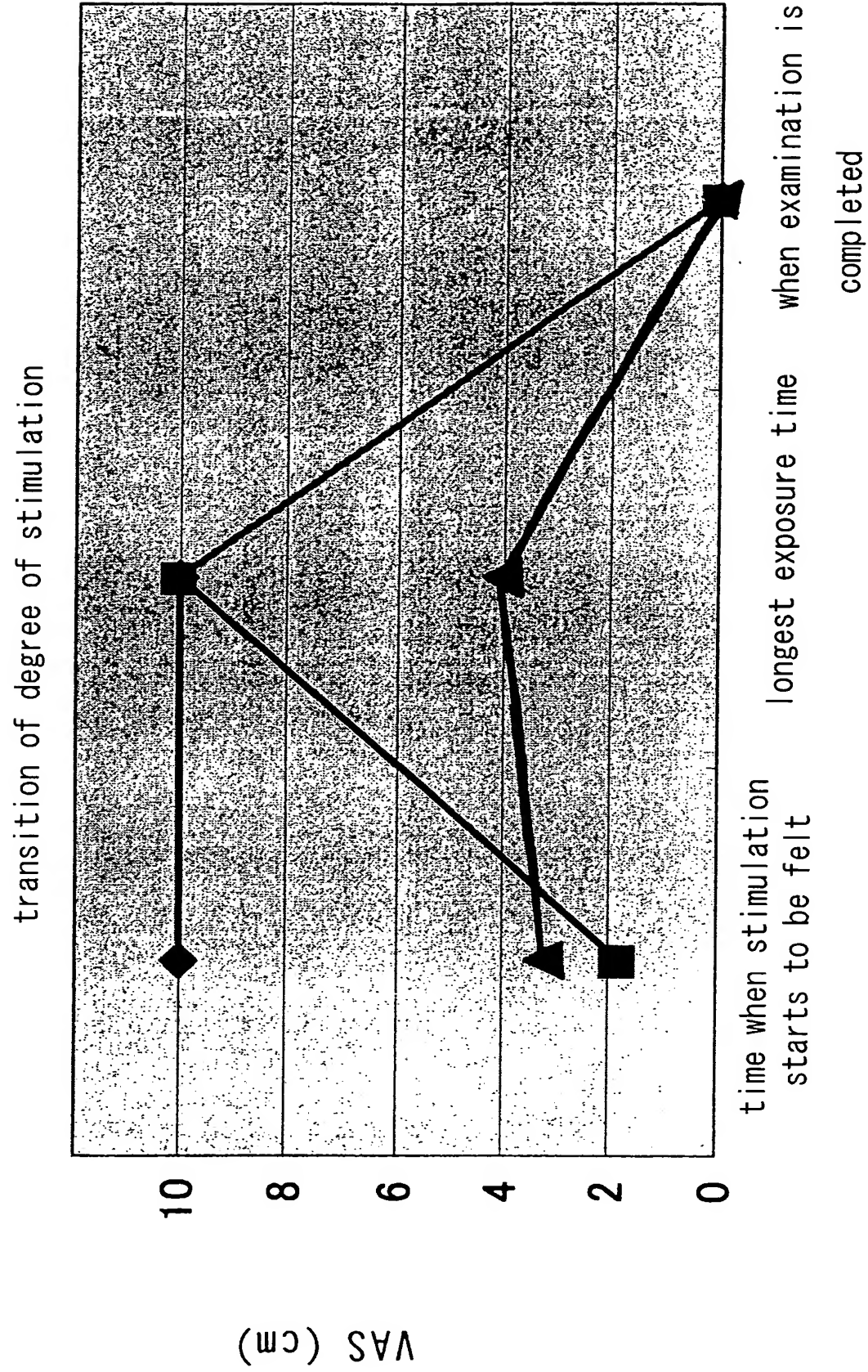


Fig. 11

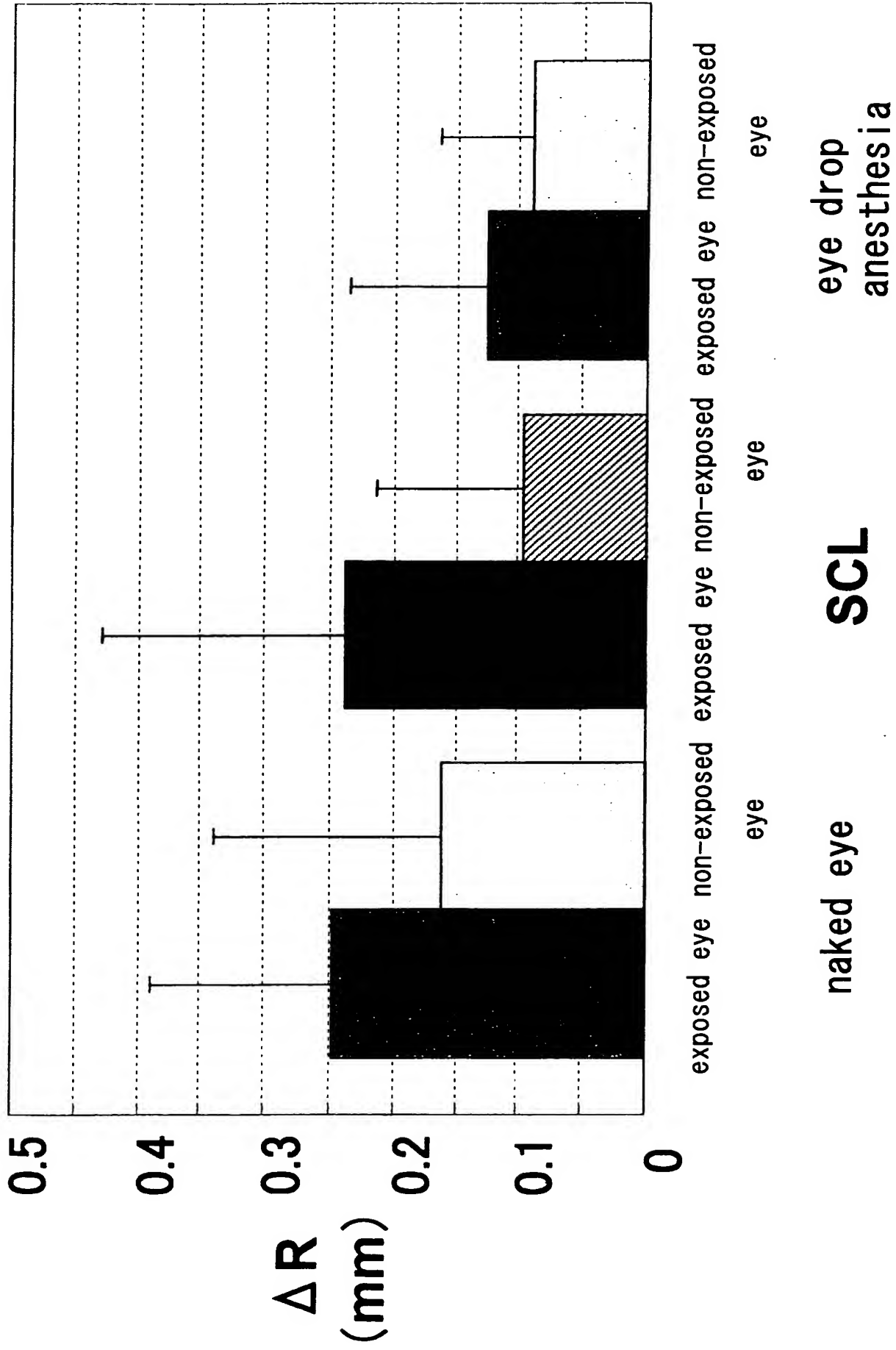


Fig. 12

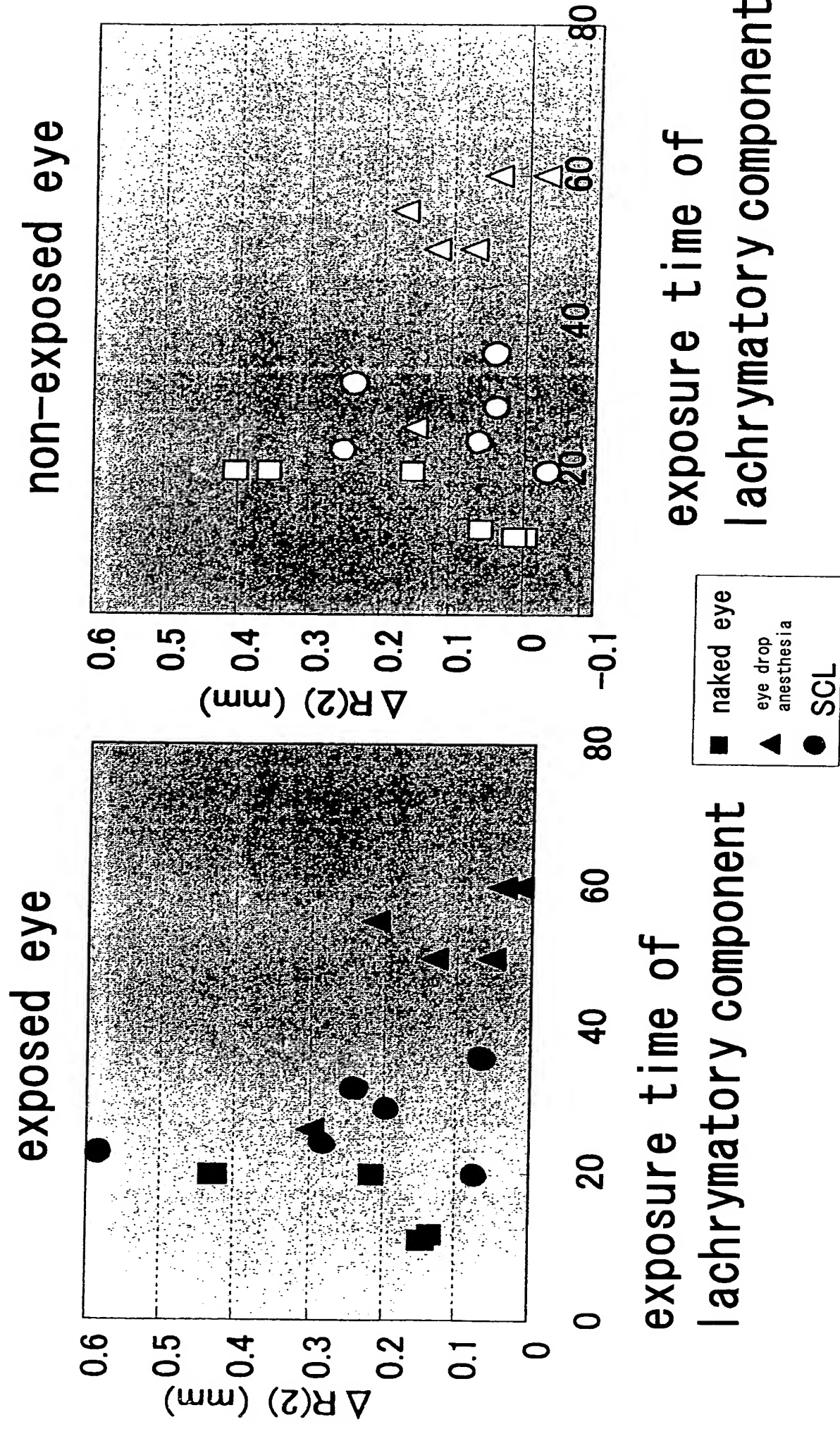


Fig. 13

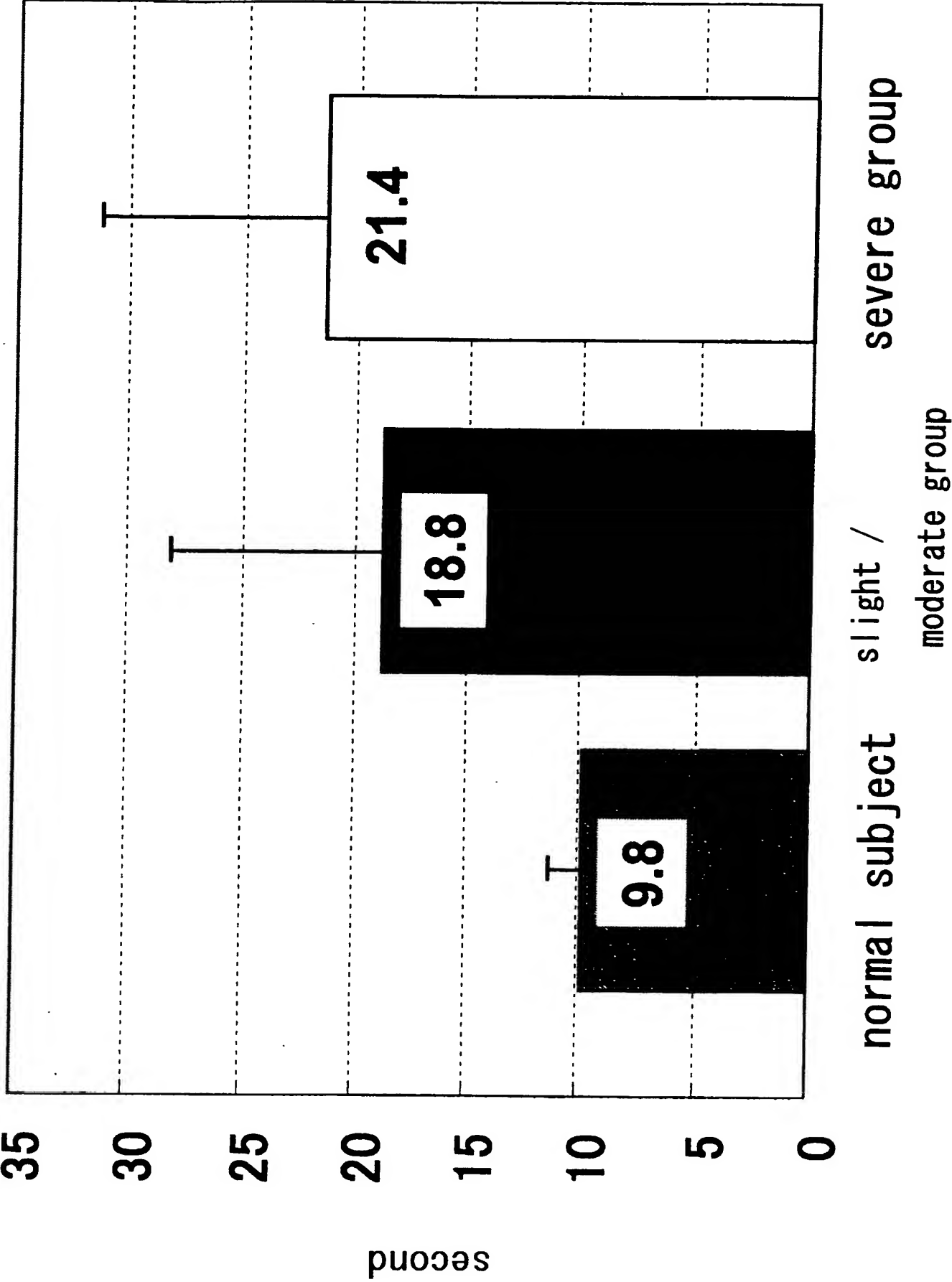


Fig. 14

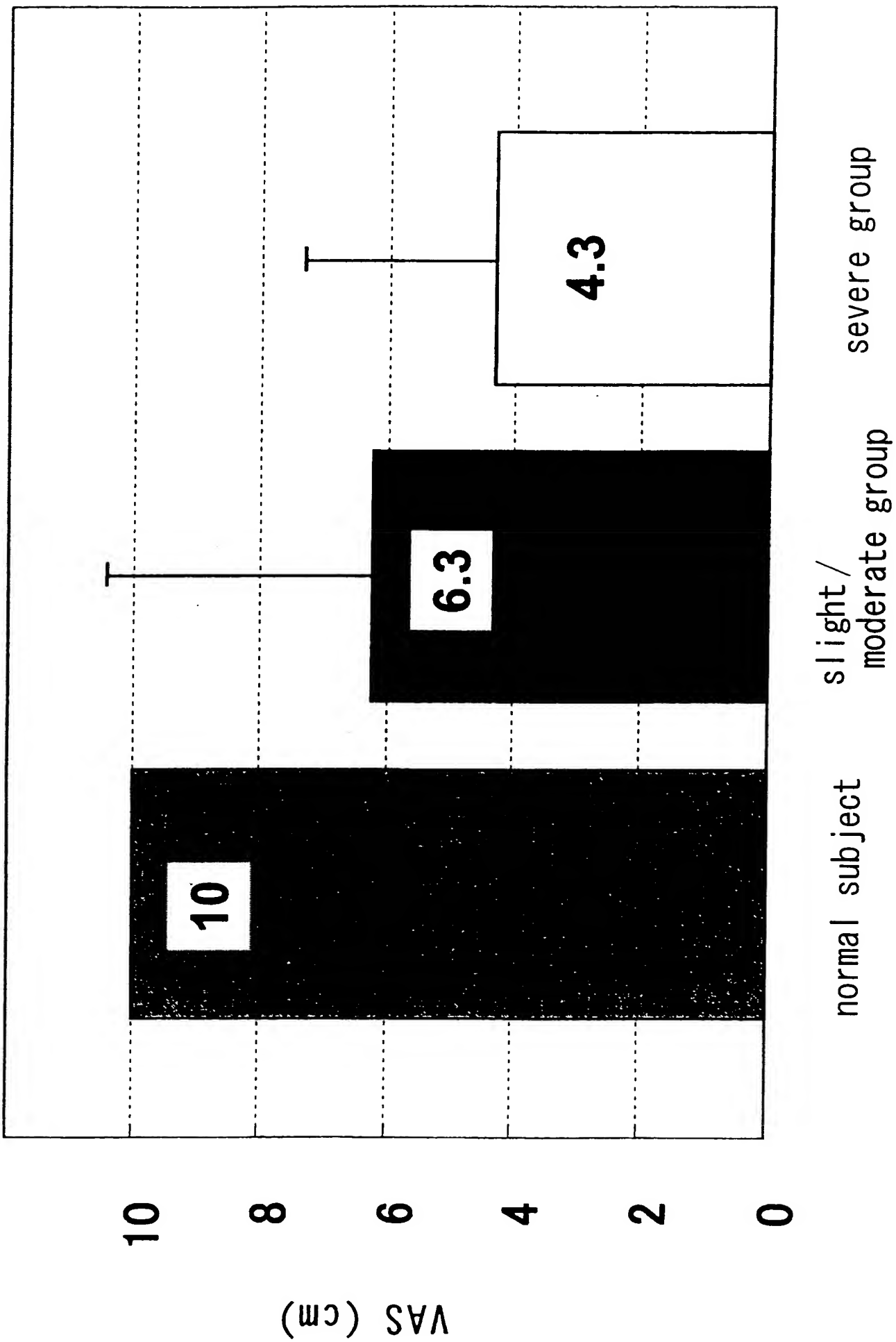


Fig. 15

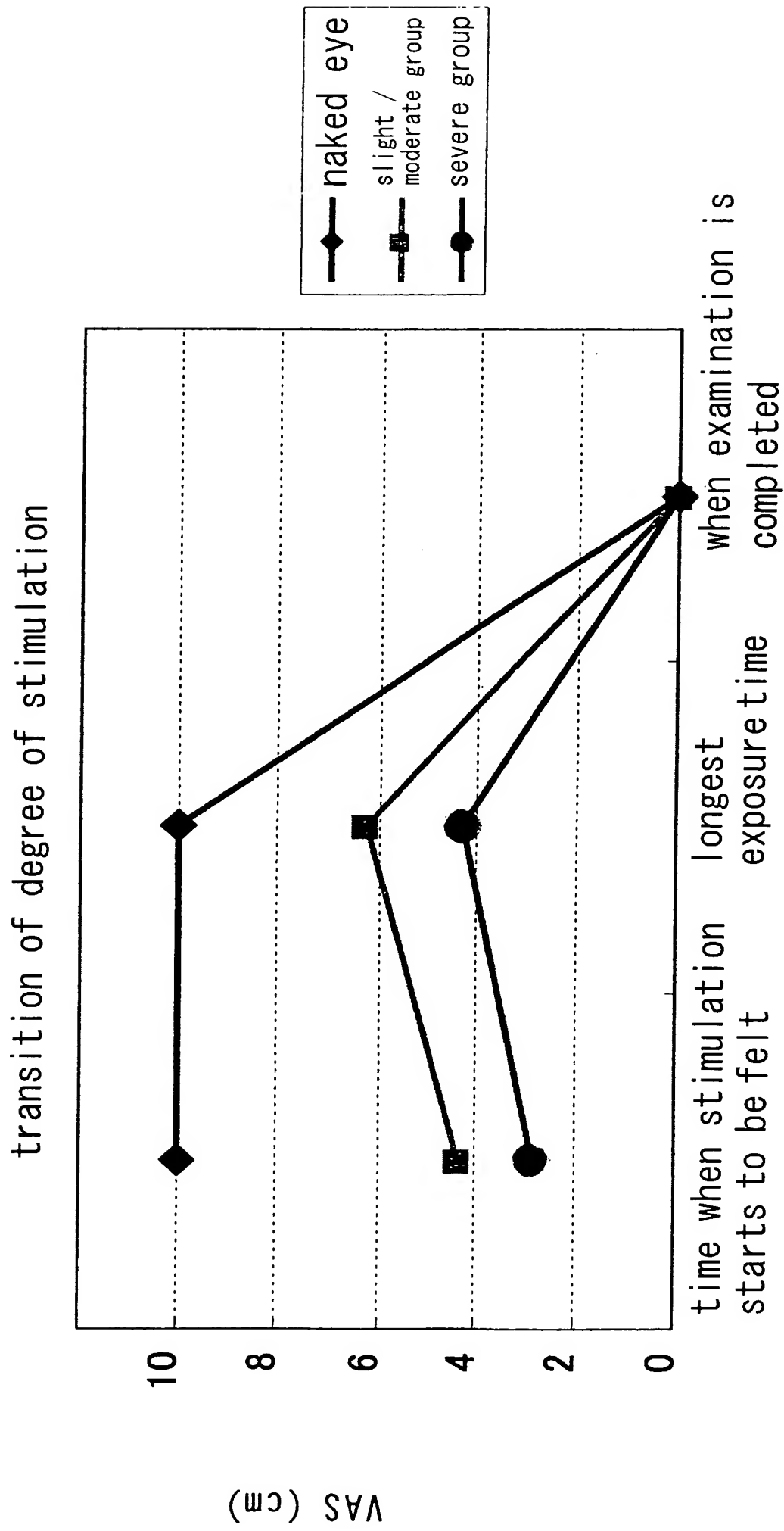


Fig. 16

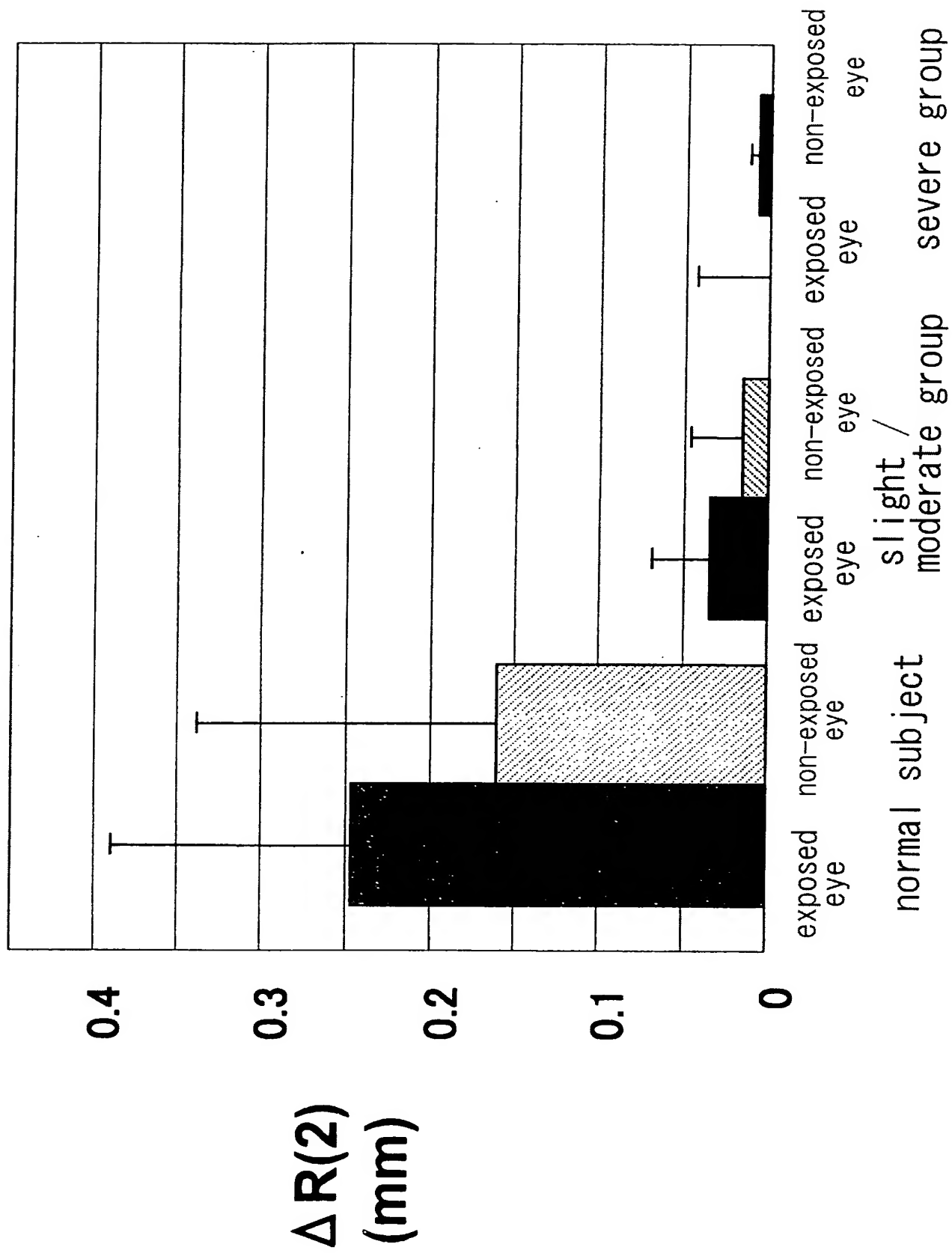




Fig. 17

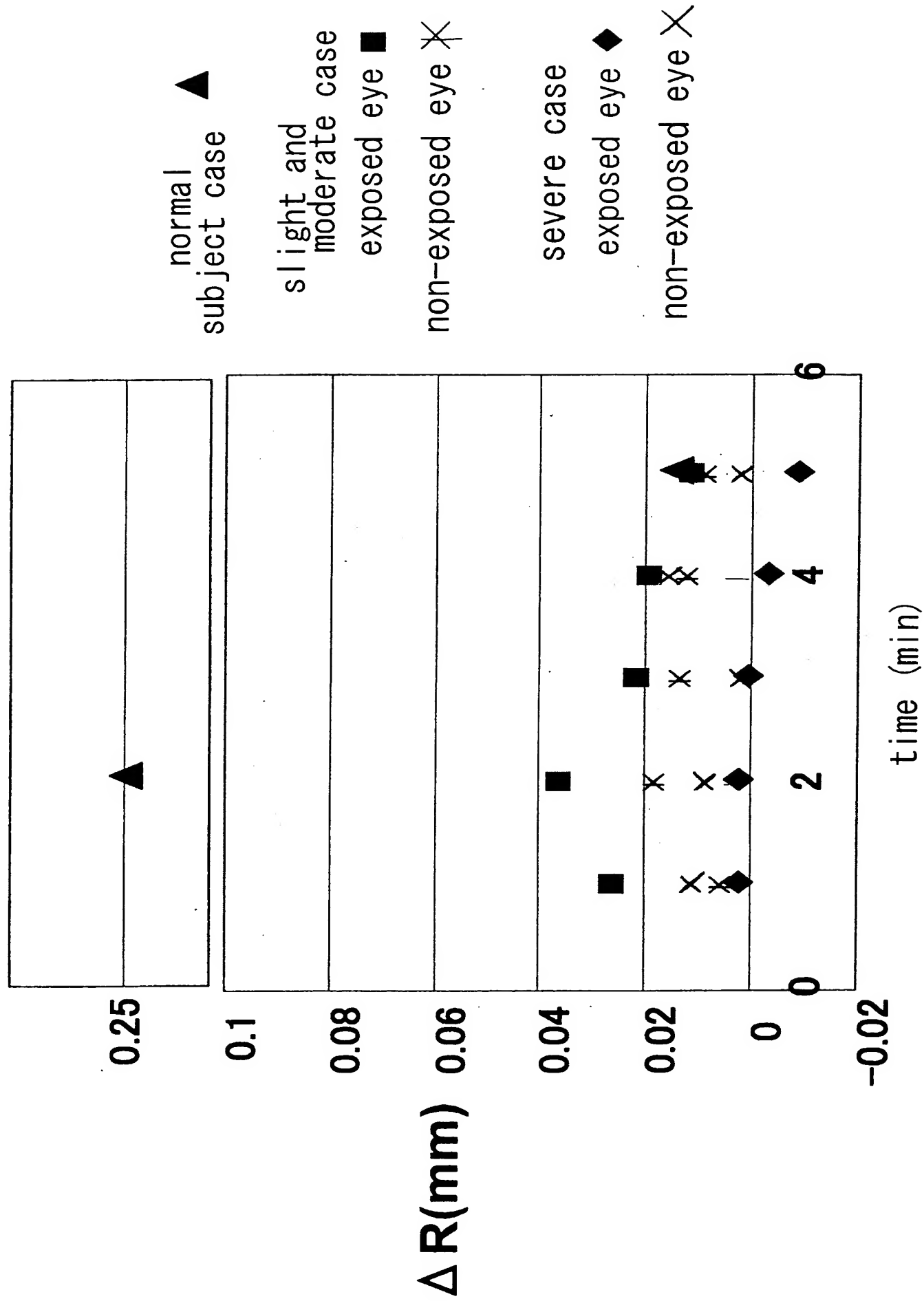
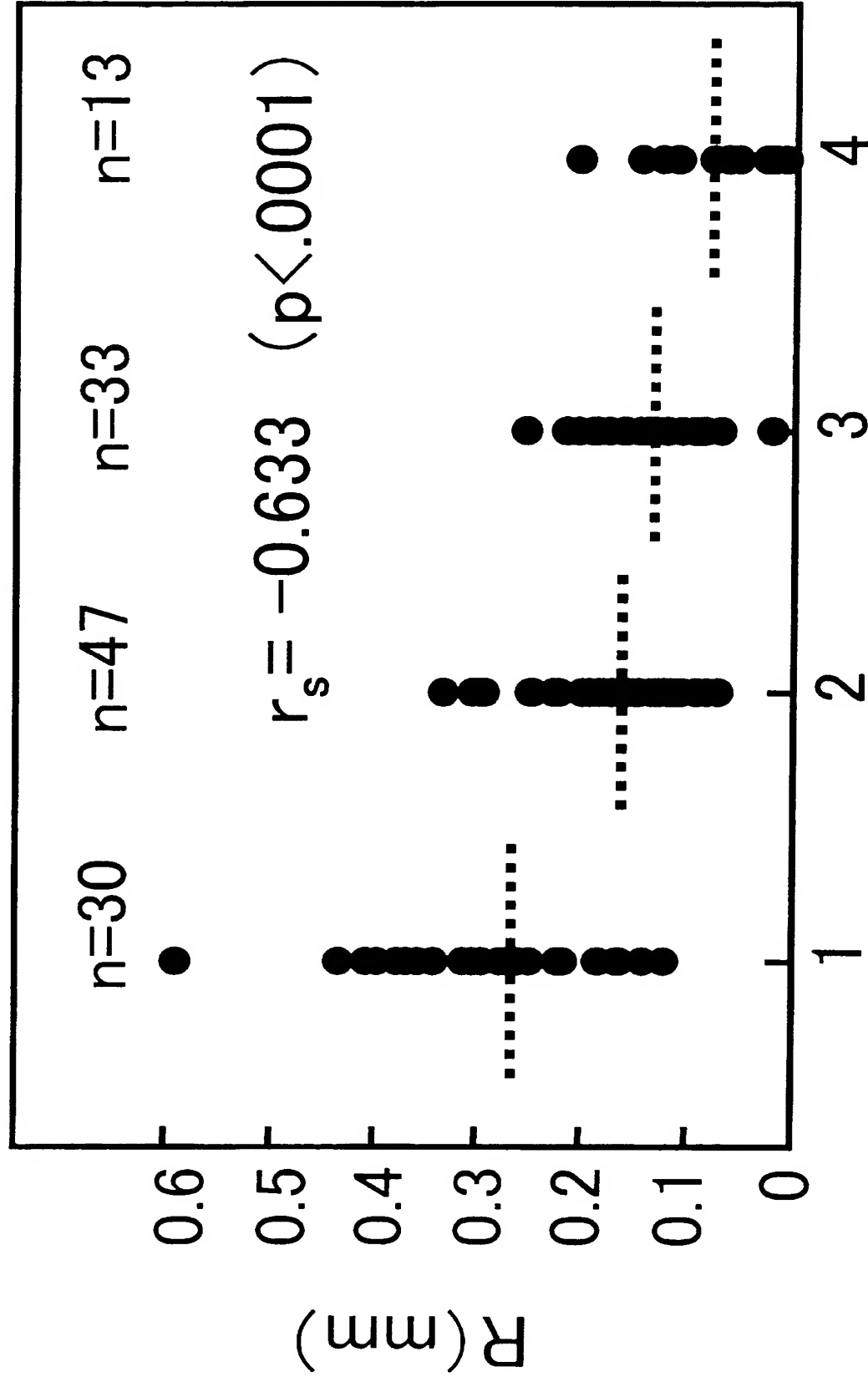


Fig. 18

# relationship between R and Grade



extensibility (Grade) of tear lipid layer

Fig. 19

change of R before and after exposure  
of lachrymatory component

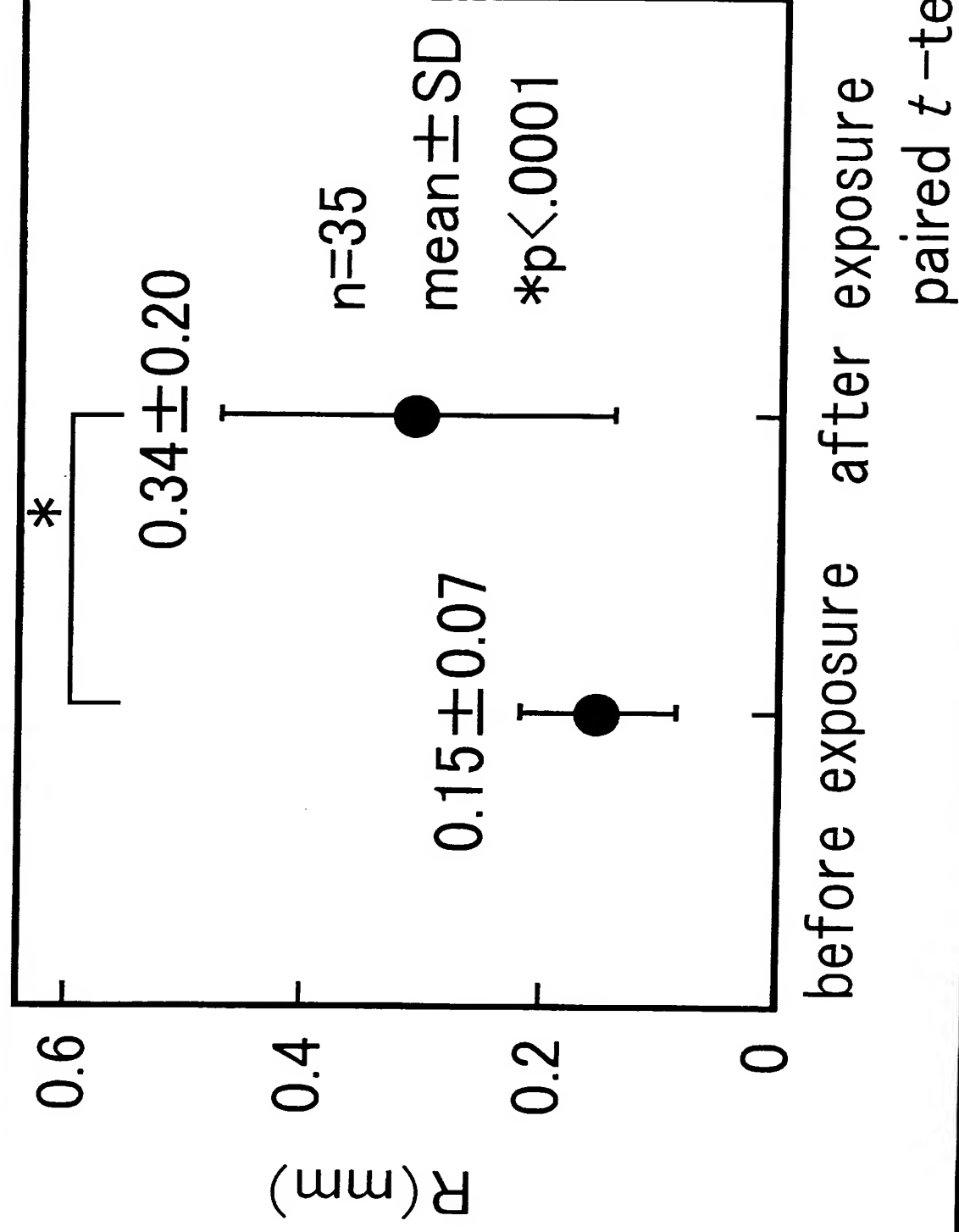
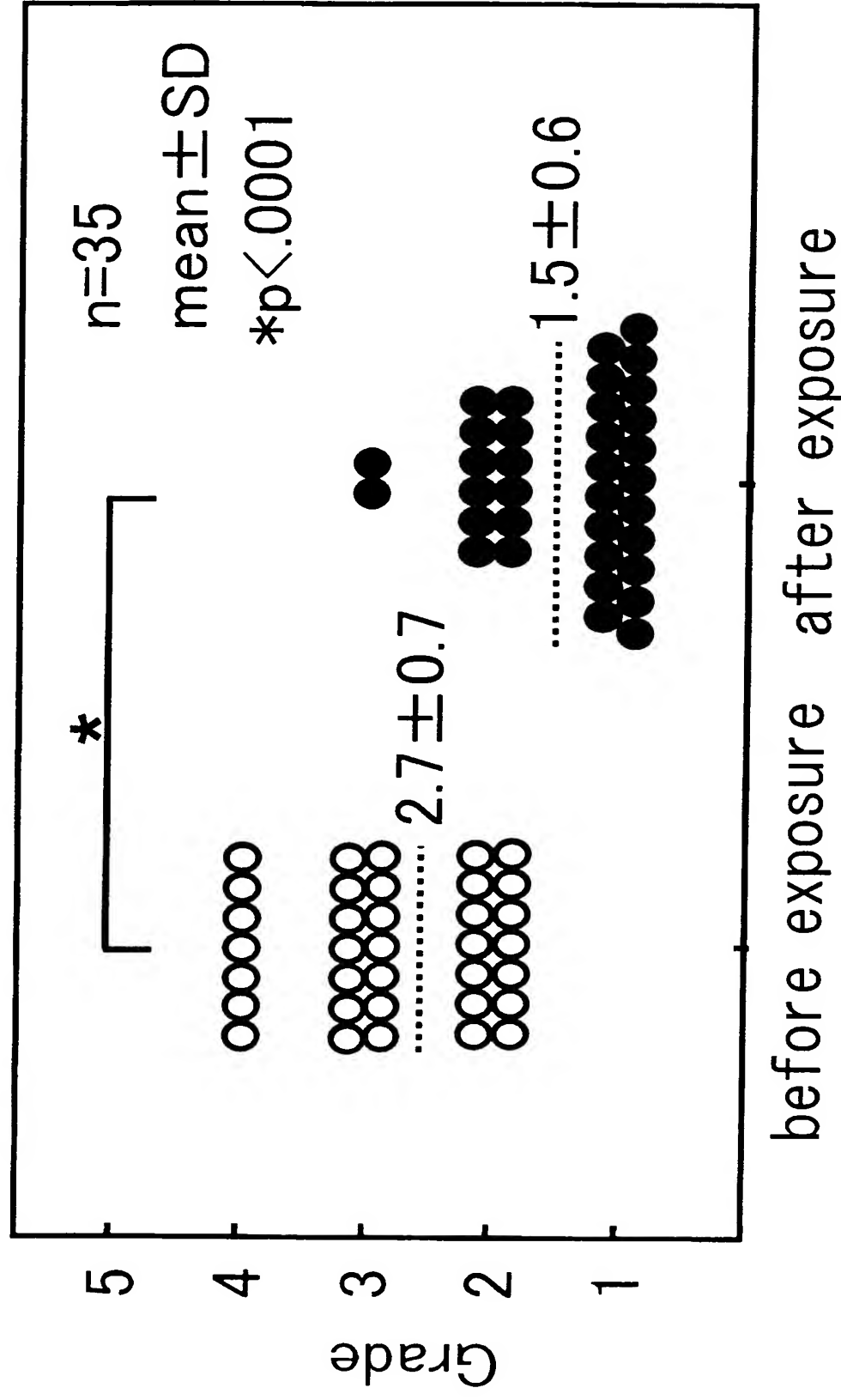


Fig. 20

change of Grade before and after exposure  
of lachrymatory component



Wilcoxon signed-rank test

Fig. 21

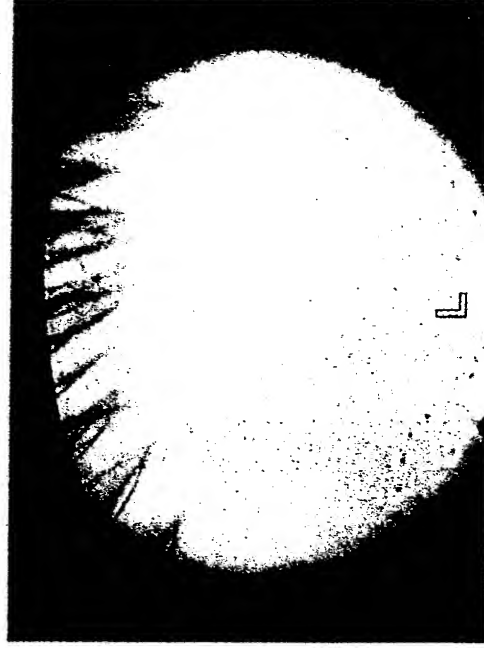
relationship between change of R and change of R  
(representative example)

R=0.02 mm



before  
exposure

Grade 3

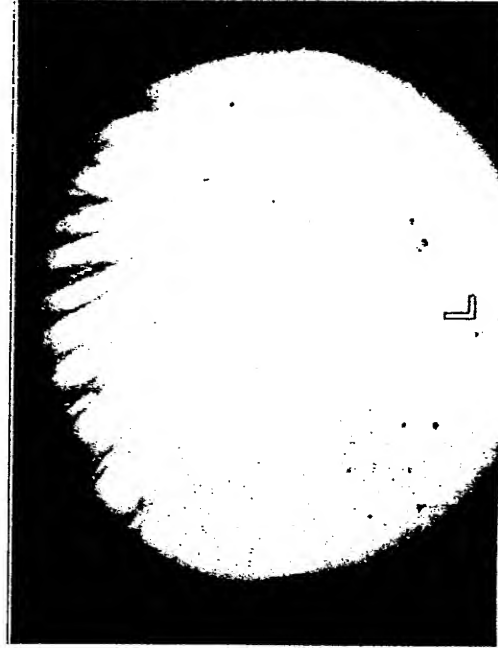


R=0.27 mm



after  
exposure

Grade 1



before exposure

Fig. 22

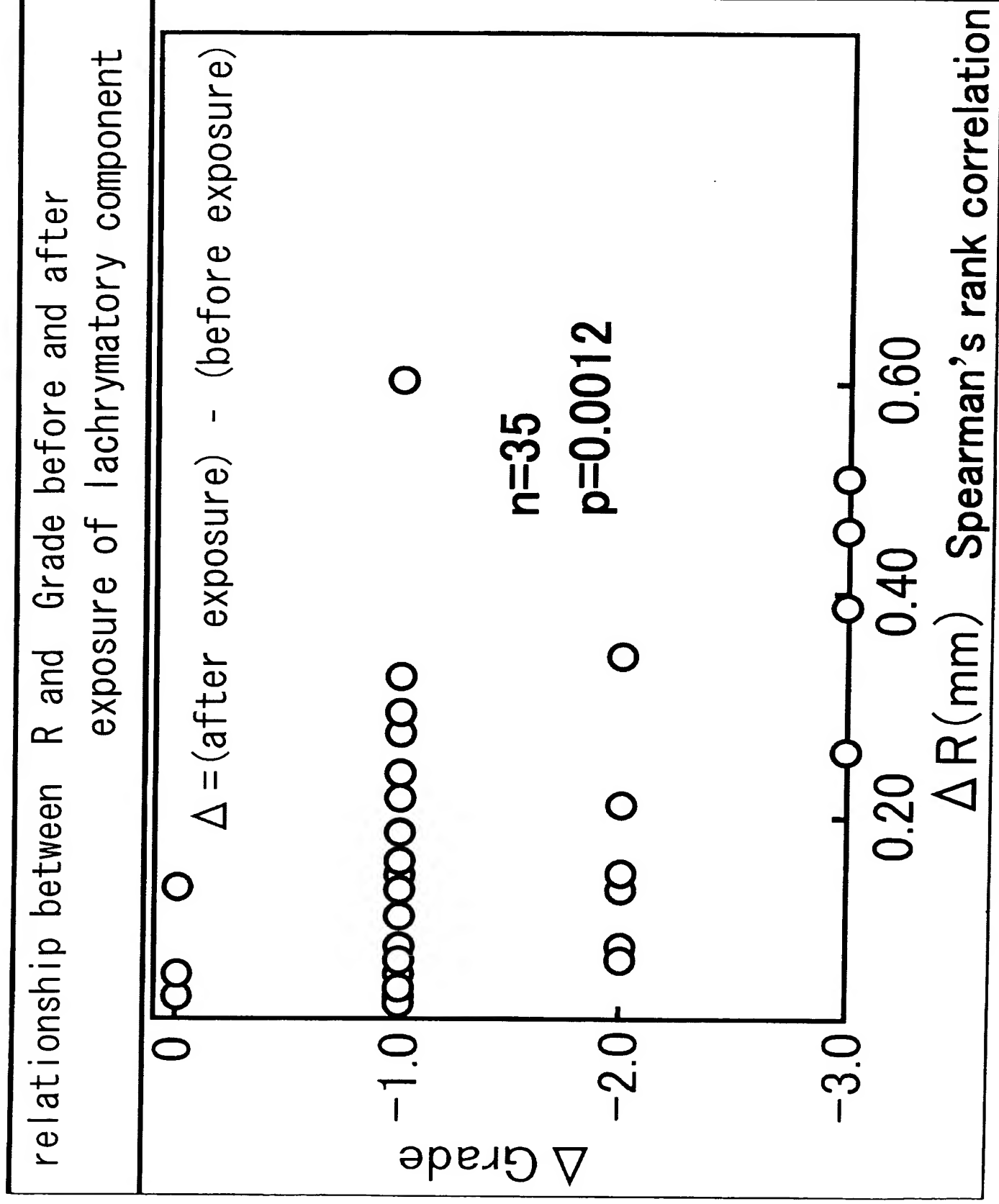
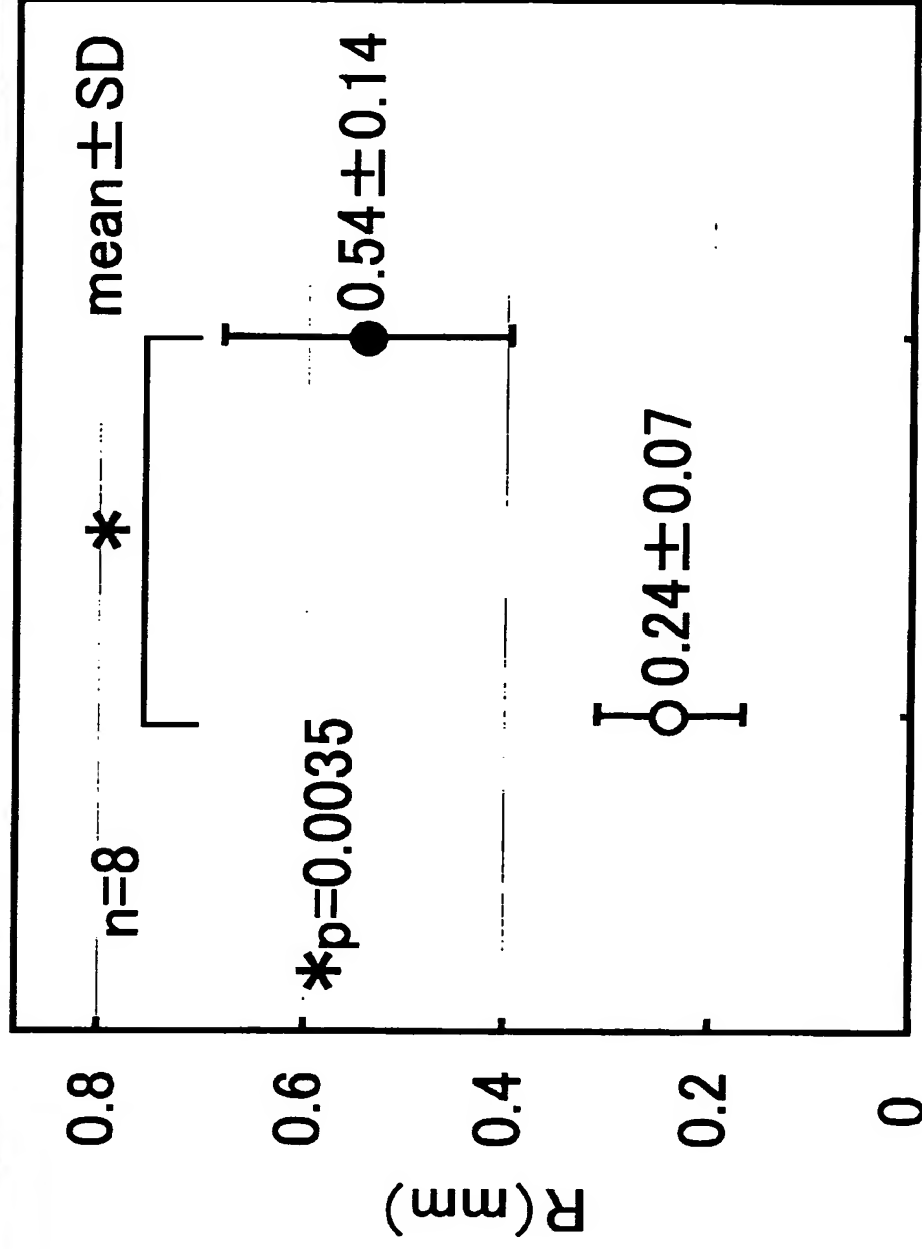


Fig. 23

change of R before and after exposure of  
lacrimary component



(paired-*t* test)

Fig. 24

change of tear specular image on SCL before and after exposure of lachrymatory component

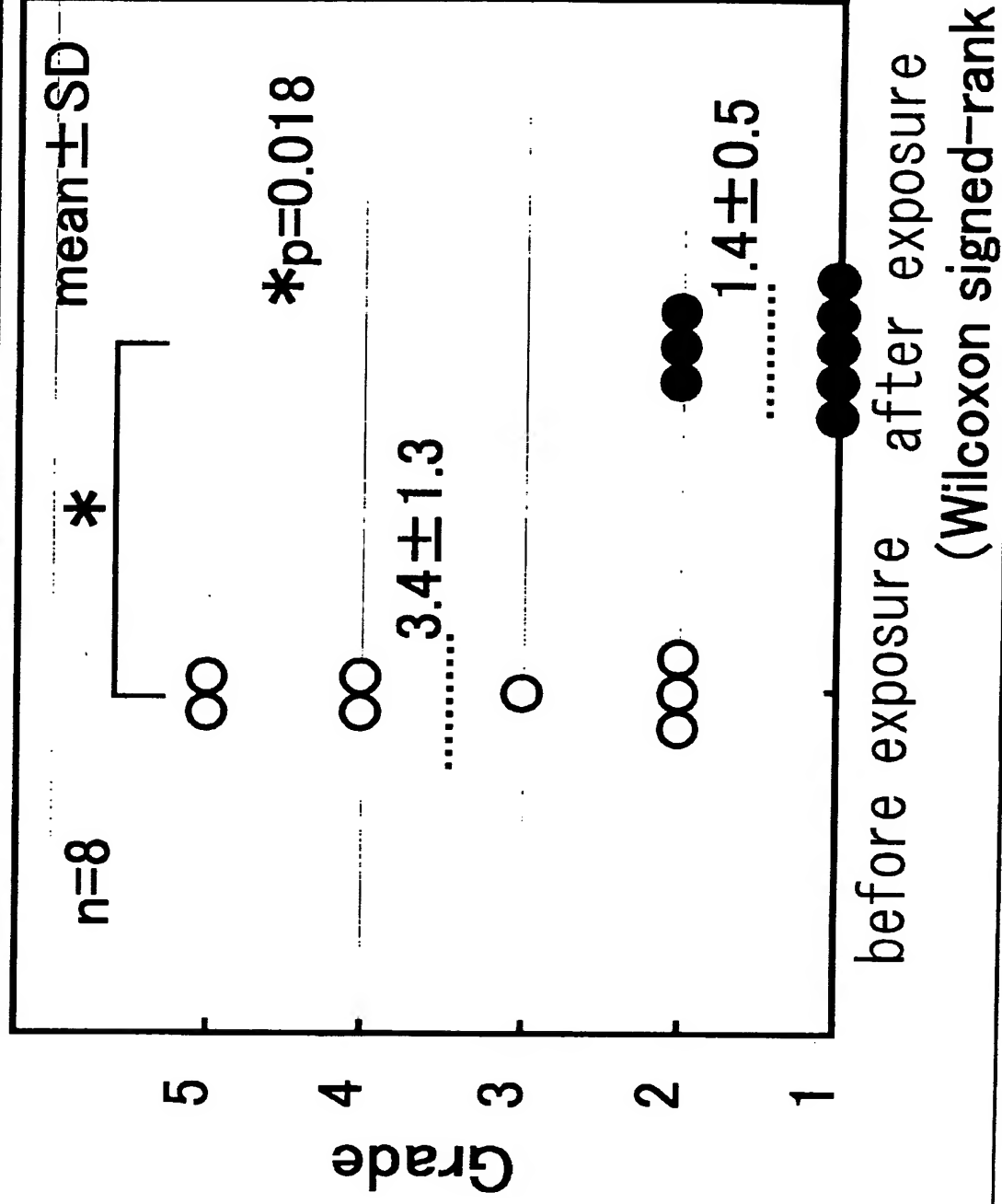
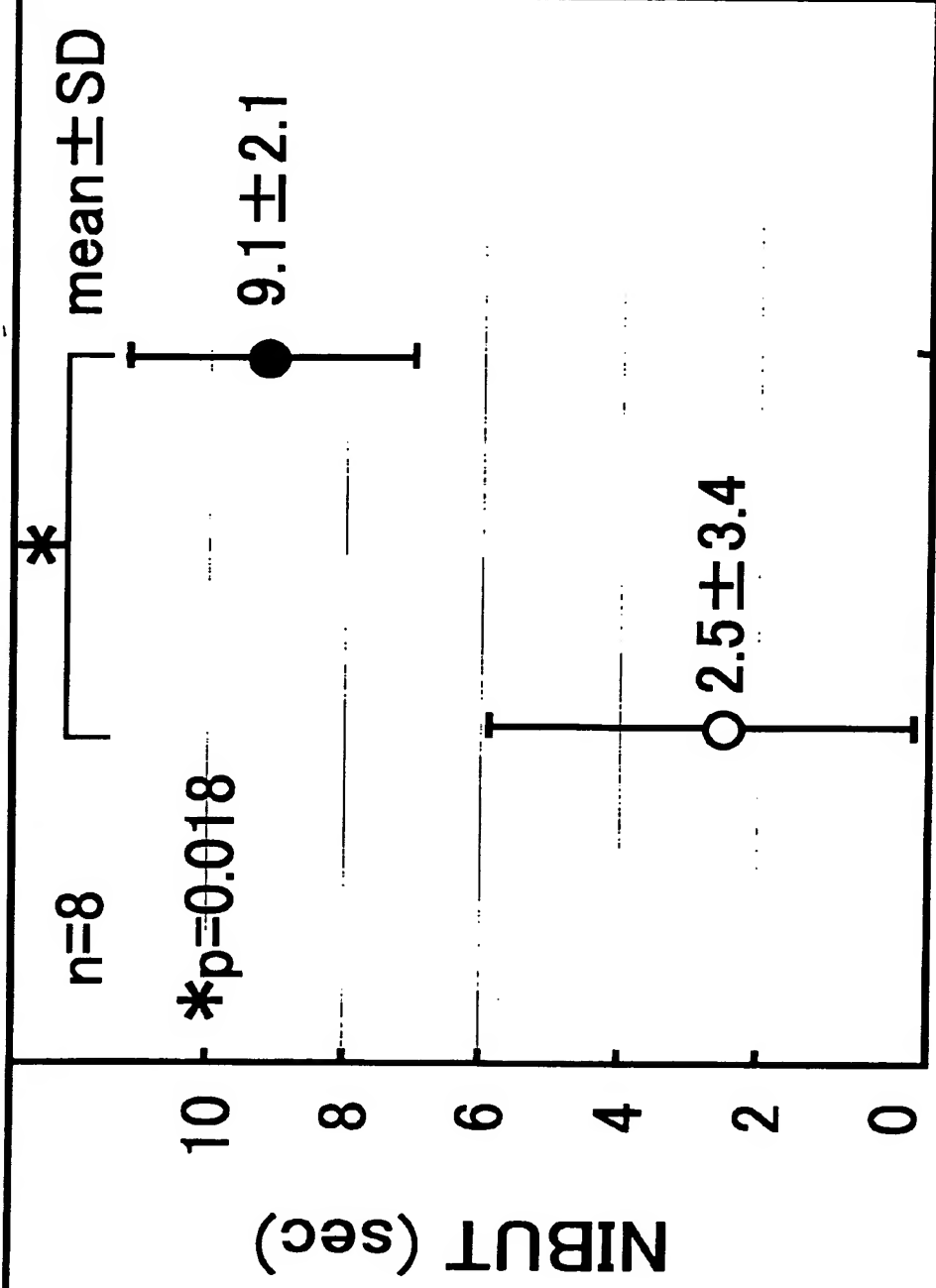




Fig. 25

change of NIBUT on SCL before and after exposure of  
lacrymatory component

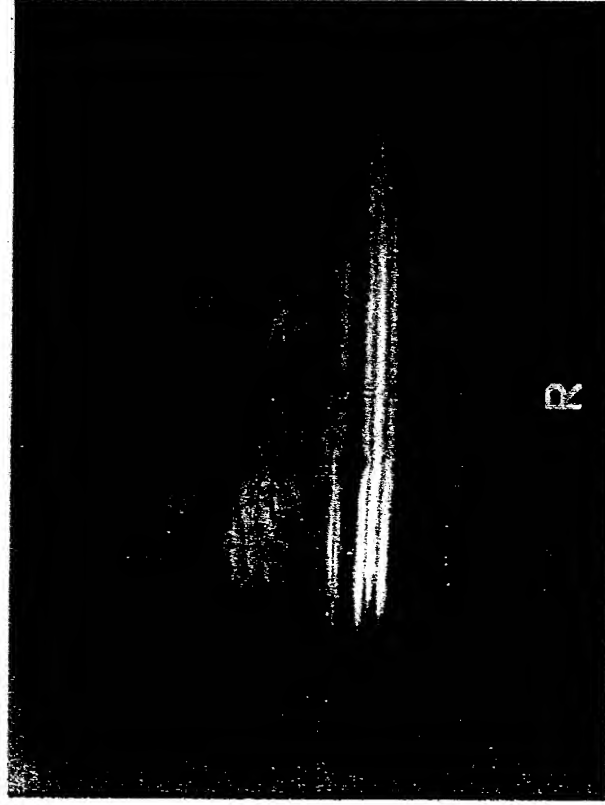


before exposure after exposure  
(Wilcoxon signed-rank test)

Fig. 26

change of R before and after exposure of lachrymatory component  
(representative examples)

before  
exposure



$R=0.16$  mm

after  
exposure

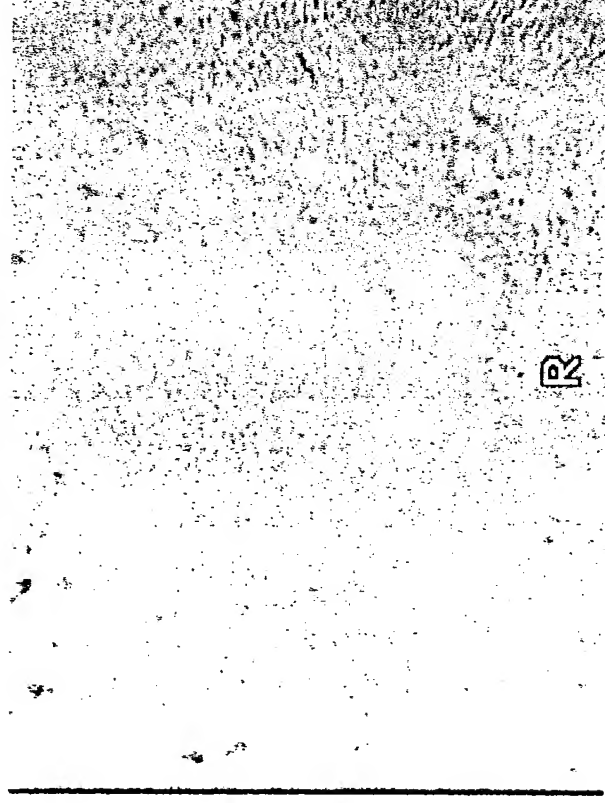


$R=0.57$  mm

Fig. 27

change of tear specular image on SCL before and after exposure of lachrymatory component (same examples, representative examples)

before  
exposure



after  
exposure



Grade 5

Grade 1

Fig. 28

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change of NIBUT on SCL before and after  
exposure of lachrymatory component  
(same examples, representative examples)

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before  
exposure



NIBUT = 0 秒

before  
exposure



NIBUT = 10 秒

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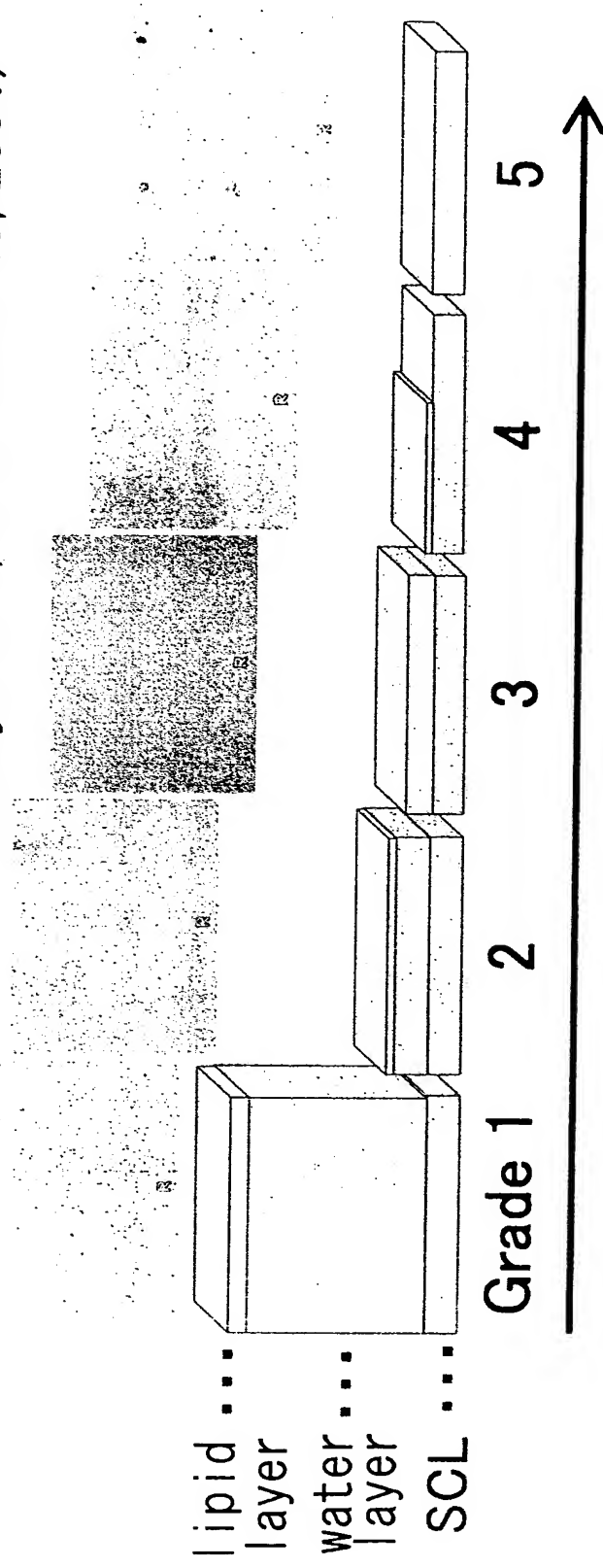
Fig. 29

## Evaluation of thickness and stability of tear on SCL

by DR-1<sup>®</sup> (Kowa)

### ① Grade classification of tear specular image on SCL

(Maruyama K, et al. IOVS 45, 2004)



### ② measurement of NIBUT (Not-invasive breakup time)